REMARKS

The Office Action dated December 1, 2004 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 9, 13, and 17 are currently pending in the application and are respectfully submitted for consideration.

In the Office Action, claims 9 and 13 were rejected under 35 U.S.C. §102(b) as being anticipated by Ashley (U.S. Patent No. 5,528,630). The rejection is respectfully traversed for the reasons which follow.

Claim 9 recites a method for implementing narrowband and broadband services on a transmission link of a telecommunications network having a frequency-dependent characteristic impedance. The method includes the step of transferring signals belonging to a narrowband service in a first frequency range below a given threshold frequency and signals belonging to a broadband service in a second frequency range above said threshold frequency in the transmission link. The method also includes the step of connecting a splitter element to the transmission link, the splitter element comprising a passive low-pass filter block connected between the transmission link and a first interface and a high-pass filter unit connected between the transmission link and a second interface. Signals relating to narrowband service are separated to the first interface by means of the low-pass filter block and signals relating to broadband service are separated to the second interface by the high-pass filter unit. The splitter element also comprises

discrete active impedance converting means for adapting the first interface to the characteristic impedance of the transmission link, whereby the discrete active impedance converting means conduct the adapting independently without external control. Wherein the discrete active impedance converting means is placed entirely between the interface of the low-pass filter block on the transmission link side and said first interface.

Claim 13 recites a splitter element in a telecommunications system for separating signals transferred in different frequency ranges. The splitter element includes a line port connected to a transmission link having a frequency-dependent characteristic impedance, a low-pass filter block connected between the line port and a first interface, said first interface being intended for signals transferred in a lower frequency range, a high-pass filter connected between the line port and a second interface which is intended for signals transferred in a higher frequency range, and discrete active converting means for adapting the first interface to the characteristic impedance of the transmission link, whereby the discrete active impedance converting means conduct the adapting independently without external control. The discrete active impedance converting means are fitted entirely between the interface of the low-pass filter block on the transmission link side and said first interface.

As will be discussed below, the cited prior art reference of Ashley fails to disclose all of the elements of the claims, and therefore fails to provide the features discussed above.

Ashley discloses a coupler for communication systems which utilize more than one frequency band. Voice signals coupled in a first frequency band 104 and data signals coupled in a second frequency 105 band are communicated between central office 101 and customer premises 102 via the tip and ring leads of communications path 103 (Ashley, Column 2, lines 33-41). Signals from tip and ring leads are received in an isolation transformer 202, which is connected to a low pass filter 203 and a high pass filter 201 (Ashley, Figure 2). According to the embodiment illustrated in Figure 5 of Ashley, two generalized impedance converter (GIC) blocks 501 and 502 are provided in the low pass filter 312 at each end (Ashley, Figure 5). Applicants note that the embodiments illustrated in Figures 6 and 7 of Ashley do not include any GIC blocks.

Applicants respectfully submit that Ashley fails to disclose or suggest a splitter element comprising discrete active impedance converting means for adapting the first interface to the characteristic impedance of the transmission link, whereby the discrete active impedance converting means conduct the adapting independently without external control, and wherein the discrete active impedance converting means is placed entirely between the interface of the passive low-pass filter block on the transmission link side and the first interface, as recited in present claims 9 and 13.

The low-pass filter, as recited in the present claims, does not comprise any active components because it is a passive low-pass filter. Furthermore, since the adapting is performed by means of discrete active impedance converting means which is placed entirely between the interface of the low-pass filter block on the transmission link side

and the first interface, there is no means for impedance adapting outside the low-pass filter block on the transmission link side. Ashley, on the other hand, fails to disclose or suggest such an arrangement and method.

According to Ashley, two GIC blocks 501 and 502 are provided **in** the low-pass filter 312 at each end thereof (Ashley, Figure 5). Moreover, if the low-pass filter 312 of Ashley were divided into active (501, 502) and passive (503-512) components, there would be two active impedance converting means. Such a configuration corresponds to the prior art solution discussed in the present specification on page 5, line 29 to page 6, line 6, and does not correspond to the apparatus and method of the claimed invention. Therefore, Ashley fails to disclose or suggest a discrete active impedance converting means, as recited in the present claims.

In addition, Applicants respectfully submit that Ashley fails to disclose or suggest that the network has a frequency-dependent characteristic impedance. Voice band communication channels exhibit frequency-dependent characteristic impedance, Z(f), when there are no two frequencies f1 and f2, such that Z(f1)=Z(f2) (Specification, page 8, line 30 – page 10, line 2). In Ashley, however, the impedances are fixed regardless of the frequency all over the voice band as well as all over the "high band."

Thus, for at least the reasons discussed above, Ashley fails to disclose or suggest all of the elements of the claims and therefore fails to anticipate the claimed invention.

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Ashley in view of Broyde (U.S. Patent No. 4,794,353). The Office Action took the position that

Ashley discloses all of the elements of the claim, with the exception of part of the impedance converting means being implemented by adding at least one resistor element to the network in parallel with capacitors and inductors of the low pass filter. The Office Action then relied on Broyde as allegedly curing this deficiency in Ashley. The rejection is respectfully traversed for the reasons which follow.

Claim 17 recites a method for implementing narrowband and broadband services on a transmission link of a telecommunications network, having a frequency-dependent characteristic impedance. The method includes transferring signals belonging to a narrowband service in a first frequency range below a given threshold frequency and signals belonging to a broadband service in a second frequency range above said threshold frequency in the transmission link. The method further includes connecting a splitter element to the transmission link, the splitter element comprising a passive low-pass filter block connected between the transmission link and a first interface and a high-pass filter unit connected between the transmission link and a second interface, signals relating to narrowband service being separated to the first interface by means of the low-pass filter block and signals relating to broadband service being separated to the second interface by the high-pass filter unit, and discrete impedance converting means for adapting the first interface to the characteristic impedance of the transmission link. The impedance converting means conduct the adapting independently without external control and the impedance converting means is placed entirely between the interface of the low-pass filter block on the transmission link side and said first interface. The low-

pass filter block is implemented as an LC network having inductances and capacitances, and a part of the impedance converting means is implemented by adding at least one resistor element to said network in parallel with capacitors and inductors of the low pass filter.

Ashley is discussed above. Broyde discloses a dissipative low-pass filter. The filter includes a first series branch, located between a first input and a first output and formed by an inductance coil in parallel a first resistor. The filter further includes a second parallel branch, located between the first output and a second output, itself connected to a second input, and formed by a capacitor fitted in series with a second resistor, the values of the inductance coil L, of the capacitor C and of the resistors R1 and Rc respectively in parallel with the inductance coil and in series with the capacitor being chosen in such a way that the minimum attenuation M of the filter is fixed at a predetermined value.

Claim 17 recites, in part, that the impedance converting means is placed entirely between the interface of the passive low-pass filter block on the transmission link side and the first interface. As discussed above, Ashley fails to disclose or suggest such an impedance converting means. Furthermore, Broyde also fails to disclose or suggest such a configuration and therefore fails to cure the deficiency in Ashley. Consequently, Ashley and Broyde, whether viewed singly or in combination, fail to disclose or suggest all of the elements of claim 17.

Applicants respectfully submit that Ashley and Broyde, whether viewed alone or in combination, fail to disclose or suggest critical and important elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 9, 13, and 17 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

Majid S. AlBassam
Registration No. 54,749

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

MSA:jf